

Serial No. 09/844,051

PATENT
Attorney Docket No. 2001B035

Claims 1 through 3 have been cancelled, claims 4 through 13 are pending in the application and presently stand rejected, and claims 14 through 16 have been added, leaving claims 4 through 16 presently pending in the application.

The Examiner has noted that claim 13 would be allowed if amended to overcome the rejection under 35 U.S.C. 112 and to incorporate the limitations of the base claim and any intervening claims.

Rejection Under 35 USC 112

With respect to claim 4, the Examiner has indicated that the phrases "substantially free of benzene" and "substantially free of sulfided hydrogenation metal" are indefinite. With respect to the benzene, the specification states at page 8, lines 16 to 19, that the feed is preferably "substantially free of benzene so as to minimize unwanted side reactions, such as transalkylation of benzene with the DIPB product." It is respectfully submitted that one skilled in the art would understand this to mean that additional benzene in the feed would reduce reaction efficiency and/or increase the impurities present in the effluent. However, one skilled in the art would also recognize that separation processes are not 100% efficient and that economic considerations often play a role in process considerations. It is respectfully submitted that sufficient guidance is provided in the specification, including that on page 8, lines 16 to 29, for one skilled in the art to understand and implement this invention. It should be noted that this limitation is not required to distinguish the present invention from the prior art.

Similarly, the specification makes clear on page 6, lines 26 to 27, that no sulfided hydrogenation metal is intended. Based on the assertion above, it would be clear to one of ordinary skill in the art that "substantially free of sulfided hydrogenation metal" would mean that none was intentionally added and that any amount present would be minimal. To further clarify this distinction, the term "substantially" has been replaced with the term "essentially," which has been found to be definite under analogous circumstances. *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (CCPA 1983)

Further, the Examiner has stated on page 3 of the Office Action that "it is unclear what kinds of metal are considered to be 'hydrogenation metal'" with respect to claim 4.

Serial No. 09/844,051

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It is respectfully submitted that the "sulfided hydrogenation metal" is defined on page 6, line 27, of the specification by the reference to "sulfided hydrogenation metal disclosed in U.S. Patent No. 3,780,123."

With the amendments made herein and in light of the clarifications above, it is respectfully submitted that the claims are in condition to be allowed under 35 U.S.C. § 112. Accordingly, it is respectfully urged that the Examiner withdraw this rejection.

Rejection Under 35 USC 103(a)

Claims 4 through 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Suggitt et al. (U.S. Patent No. 3,780,123). In particular, the Examiner argues that Suggitt et al. teach a process of disproportionation of cumene in the presence of a mordenite catalyst to produce a product containing benzene and a mixture of diisopropylbenzene isomers.

It is respectfully noted that Suggitt et al. require the presence of a sulfided hydrogenation metal and teach that the catalyst would deactivate rapidly without the metal, thereby teaching away from the present invention. The disclosure of Suggitt et al. also requires a sulfide compound added to the reaction mixture to maintain catalyst activity (column 3, line 73 through column 4, line 16; Example VI; and claim 1). Claim 4 and dependent claims 5 through 16 of the present application require neither sulfided hydrogenation metal nor a sulfide compound in the feed in order to disproportionate cumene to produce DIPB isomers. Applicants respectfully note that the omission of an element and retention of its function is an indicia of unobviousness. *In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966)

The Examiner has rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Suggitt et al. (U.S. Patent No. 3,780,123) in view of Calabro et al. (U.S. Patent No. 6,049,018). Applicants respectfully apply the same arguments as above with respect to Suggitt et al. and respectfully submit that unobviousness in light of the Suggitt et al. disclosures renders further discussion of Calabro et al. unnecessary.

Serial No. 09/844,051


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With the amendments made herein and in light of the clarifications above, it is respectfully submitted that the claims are in condition to be allowed under 35 U.S.C. § 103(a). Accordingly, it is respectfully urged that the Examiner withdraw this rejection.

CONCLUSION

In view of the foregoing comments, entry of this Amendment and allowance of this application is earnestly solicited. Should the Examiner have any further comments or questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703) 872-9310 on March 12, 2003.

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Serial No. 09/844,051

PATENT
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VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE CLAIMS:

The following changes are being made to claim 4:

4. A process for the selective production of meta-diisopropylbenzene and para-diisopropylbenzene, said process comprising the step of contacting a feed containing cumene under disproportionation conditions with a catalyst comprising a molecular sieve having pores with a minimum cross-sectional dimension of at least 6 Angstrom to produce a disproportionation effluent containing benzene and a mixture of diisopropylbenzene isomers, wherein the feed is substantially free of benzene and the catalyst is [substantially] essentially free of sulfided hydrogenation metal.